



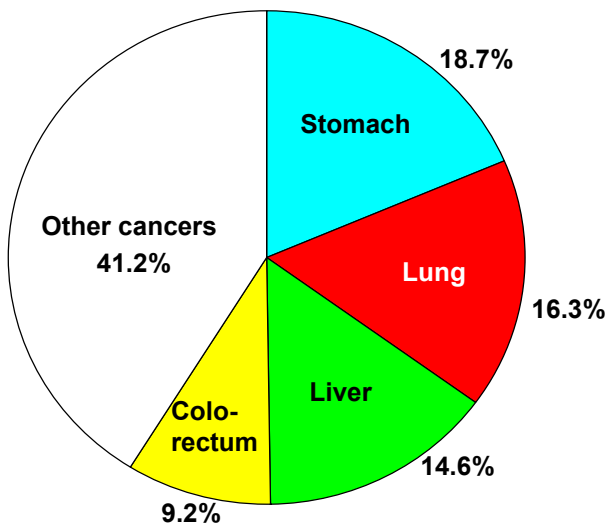
Asian Cancer Etiology and Prevention with Special Reference to Lung, Stomach, Colon and Breast Cancer

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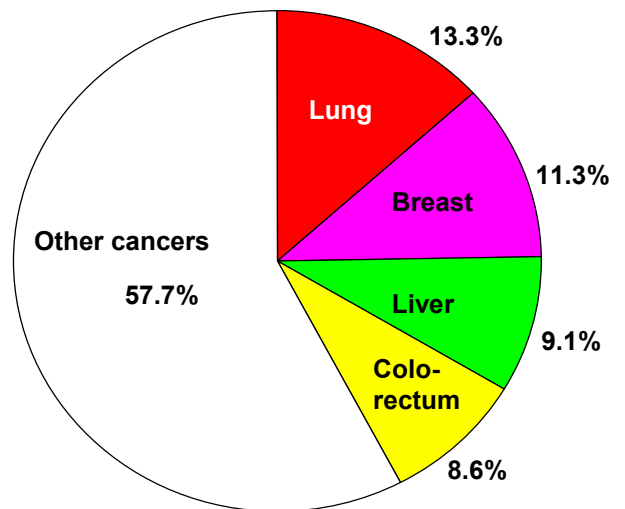
**Epidemic pattern of Asian cancer
Causal factors of main cancers
Possible prevention strategies**

Proportional distribution of main sites of cancer in both sexes

Eastern Asia
2,556,313



South-Eastern Asia
495,332



IARC: GLOBOCAN 2000

Estimated Attribution of Main Cancers in Asia

Infectious agents: 30-40%

Stomach (Hp, EBV)

Liver (HBV/HCV, OV) Cervix (HPV) Naso-pharynx (EBV)

Smoking and drinking: 25-35%

Upper G-I tract (Oral cavity, Esophagus, Stomach)

Respiratory tract (Larynx, Lung)

High calorie intake and physical inactivity: 20-30%

Colon & Rectum Bile ducts

Breast Endometrium

Prostate

Evidence-based related factors for cancer by site

Factor Site	Smoking	Drinking	G-Y vegetable	Fat	Exercise	Other risk factors	Other protective factors
Esophagus	⊙	⊙	⊙				
Stomach	○	○				Hp infection High salt	
Colon Rectum		○	○	○	○	Chronic inflammation	Fresh fish
Liver	○				○	Virus(HCV,HBV)	
Lung	⊙		○				Fresh fish
Prostate					○		
Breast		○	○		○	Obesity	
Uterus		○	○		○	Obesity	
Cervix	○		○			virus(HPV)	

⊙ Convinced

○ Probable

Probable Causal Factors of Lung Cancer

Risk factors

Habitual smoking (Inc. Passive smoking)

Air pollution

High fat intake

Occupational exposure

(Asbestos, Chrome, Radon, Arsenic et al)

Infectious agents

(Tb, Fungi, HPV et al)

Protective factors

Green-yellow vegetables & Fruit

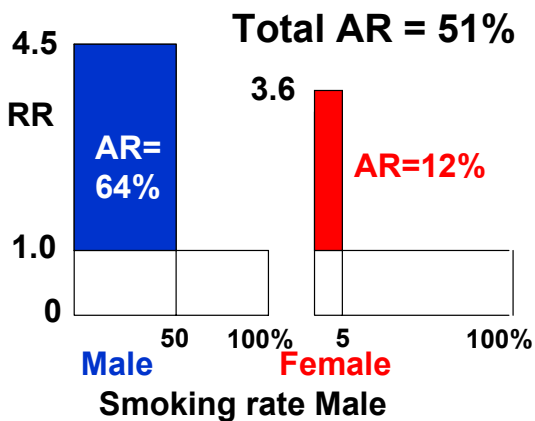
(Vitamin C, E, Carotenoids and Selenium et al)

Japanese traditional foods

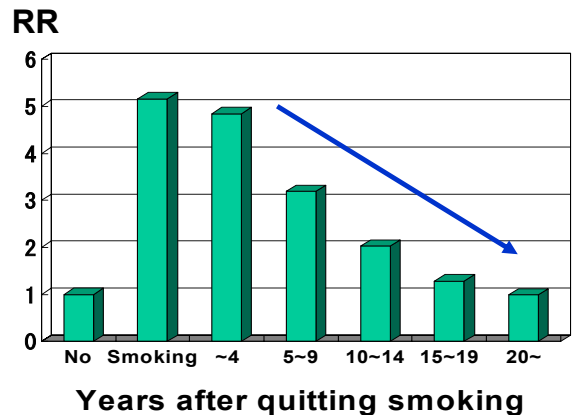
(Fish & Soy bean products et al)

Habitual Smoking and Lung Cancer from Japan Collaborative Cohort Study since 1988 (Wakai K et al, 2003)

Population attributable risk
Of habitual smoking
for lung cancer

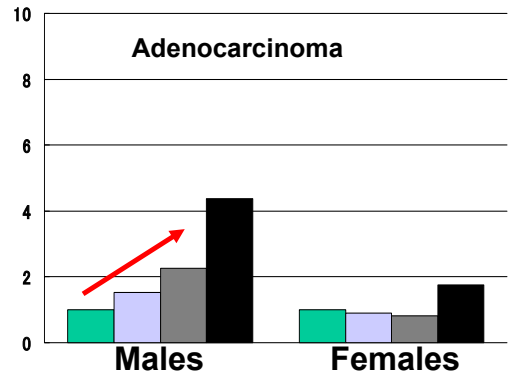
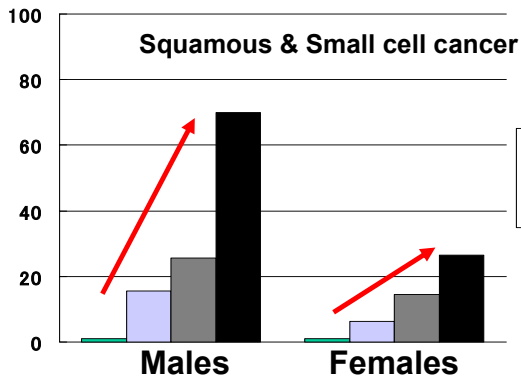


Risk reduction of lung cancer
after quitting smoking

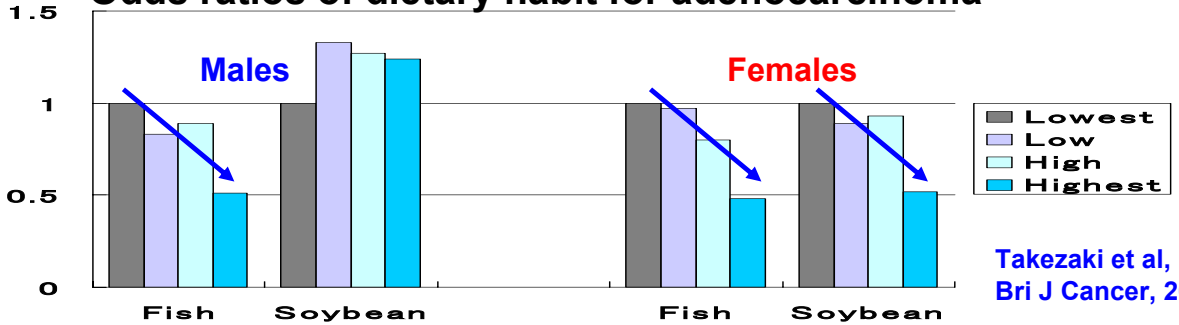


Odds ratios of habitual smoking for lung cancer

Hospital-based Epidemiologic Research Program at Aichi Cancer Center Hospital (HERPACC)



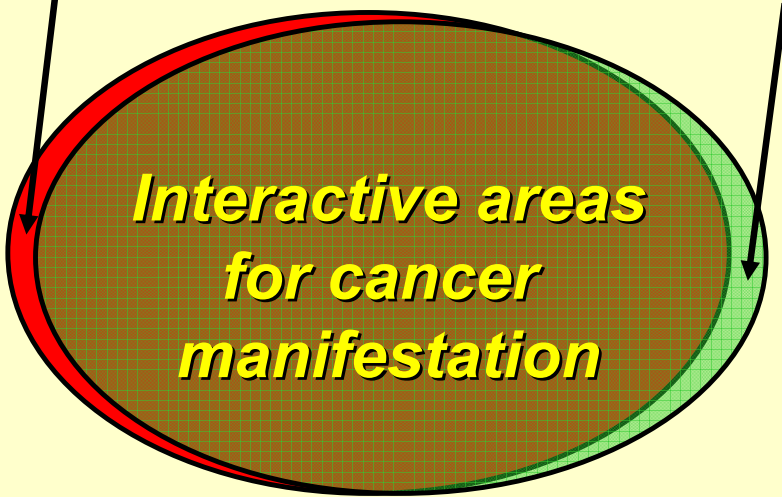
Odds ratios of dietary habit for adenocarcinoma



Takezaki et al,
Bri J Cancer, 2001

Host-specific Factors

Environmental Factors

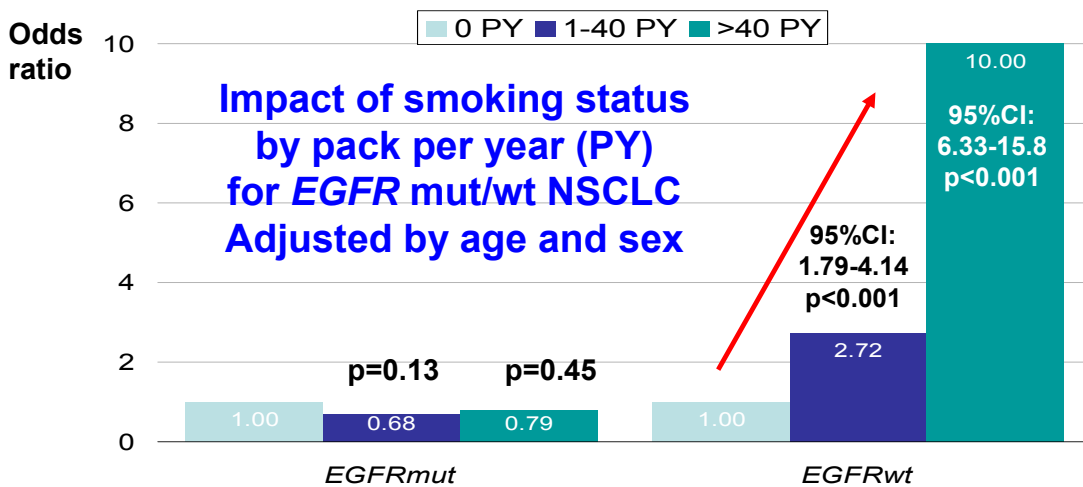


**Order-made
Prevention
Clinics**

Human cancer perspective

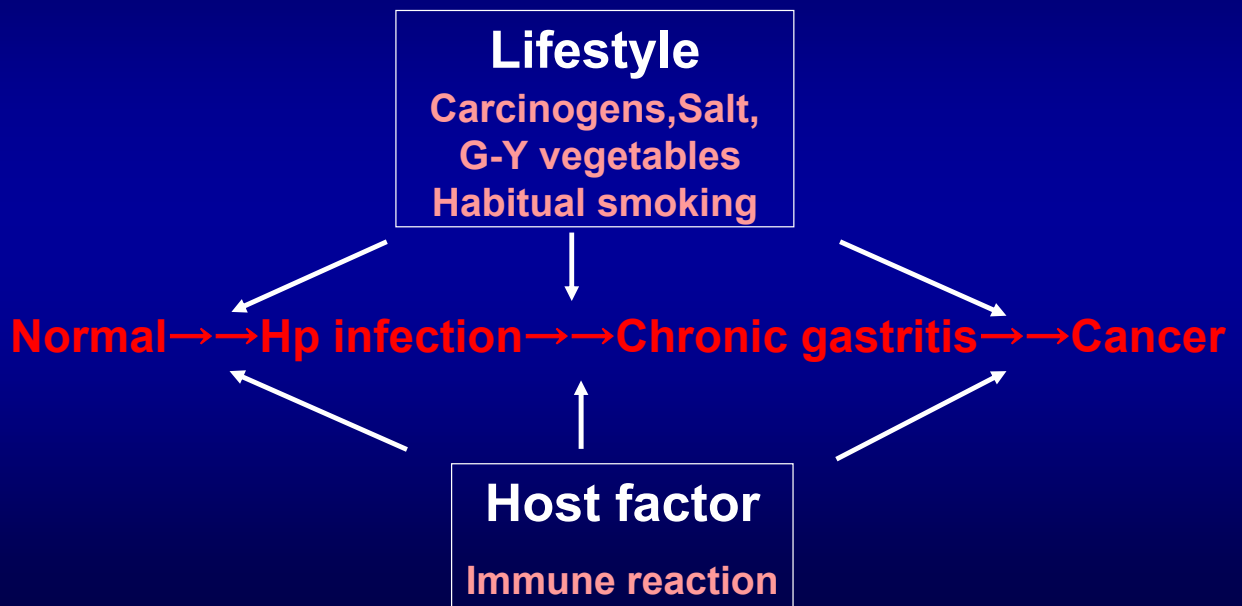
Current topics of EGFR mutation for non-small cell lung cancer (NSCLC)

Ethnicity: Asian > Non-Asian
Sex: Female > Male
Subtype: Adenocarcinoma > Non adenocarcinoma

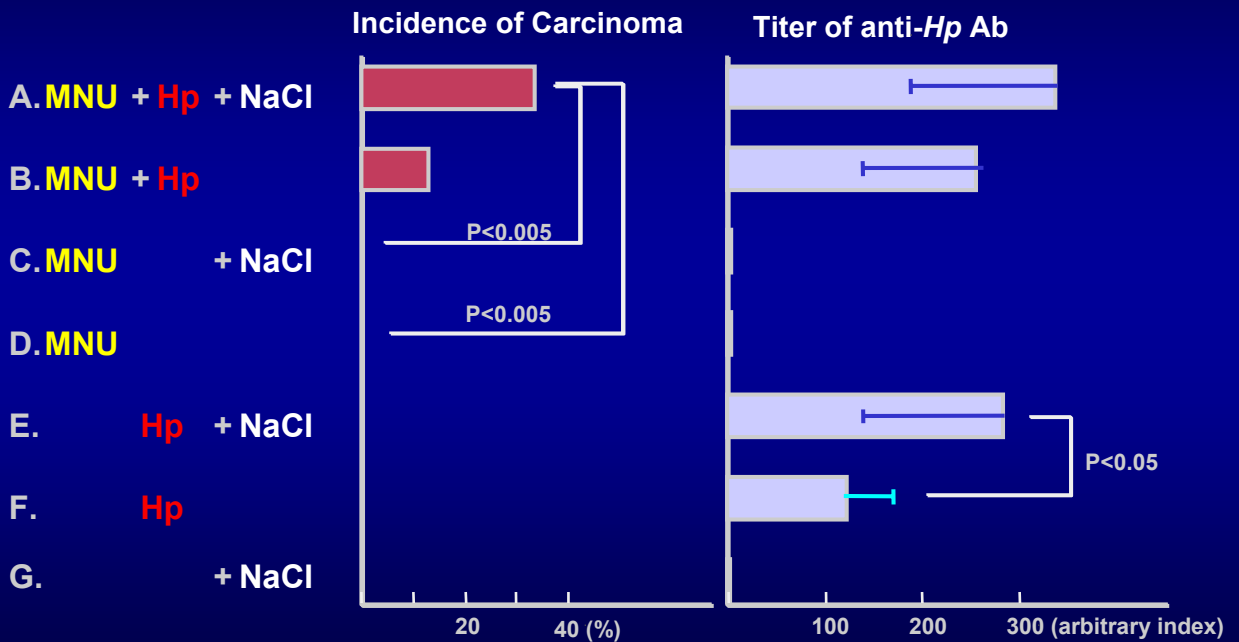


from Matsuo K et al, 2006.

Carcinogenicity of Stomach Cancer and Gene-Environment Interaction

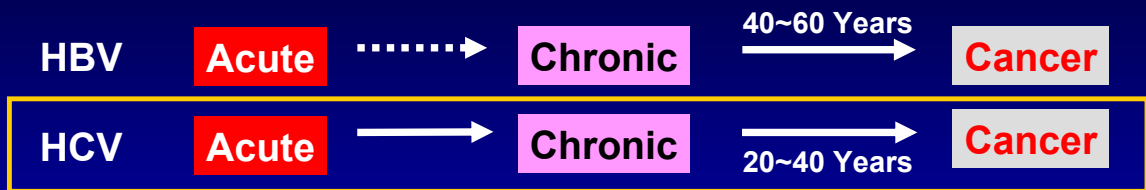


Promotion of carcinogenicity of stomach cancer of Mongolian gerbils by Hp infection and salt

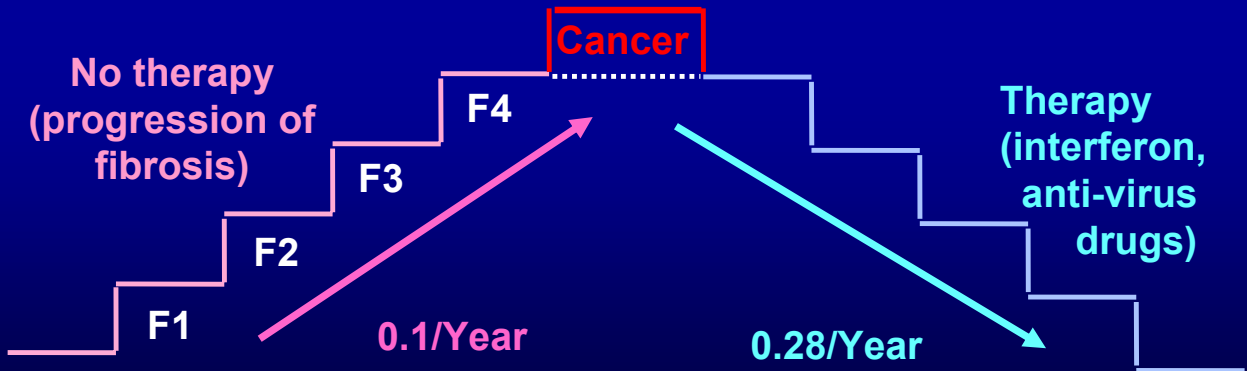


(Provided from Tatematsu M, Aichi Cancer Center Research Institute)

Cancer progression by type of hepatitis virus



Natural history of HCV related hepatitis



From Omata et al, Tokyo University, 2003

The KOJACH Cooperative Study on Currently Increasing Colorectal and Breast Cancers

Main Goals of Study

Searching of lifestyle factors for colorectal and breast cancer
Clarifying gene-environment interaction for cancer in three countries
Establishment of common or independent prevention measurement

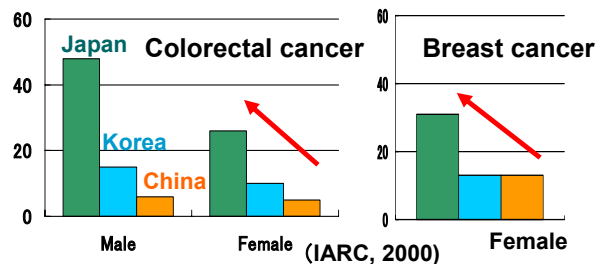
Methodology

Case-referent study on risk factors by using standardized SQFFQ
Molecular and metabolic comparative epidemiologic analysis
Evaluation of prevention trials for lifestyle in three countries

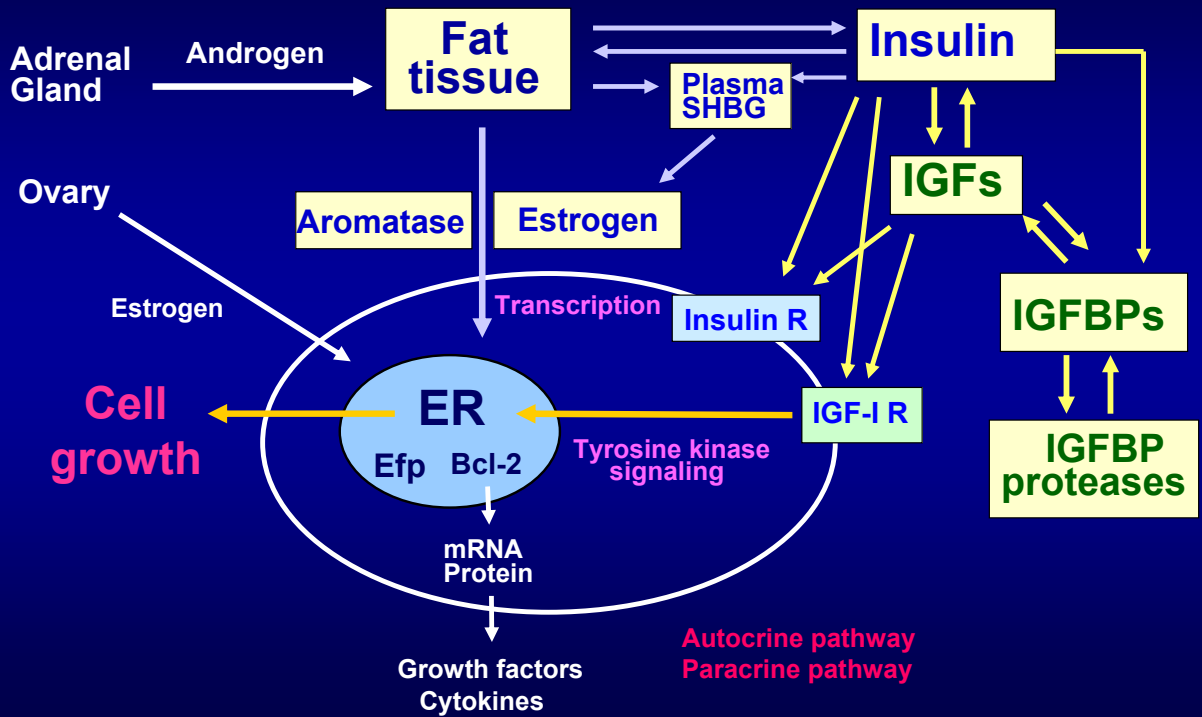
Map of KOJACH Cooperative Study

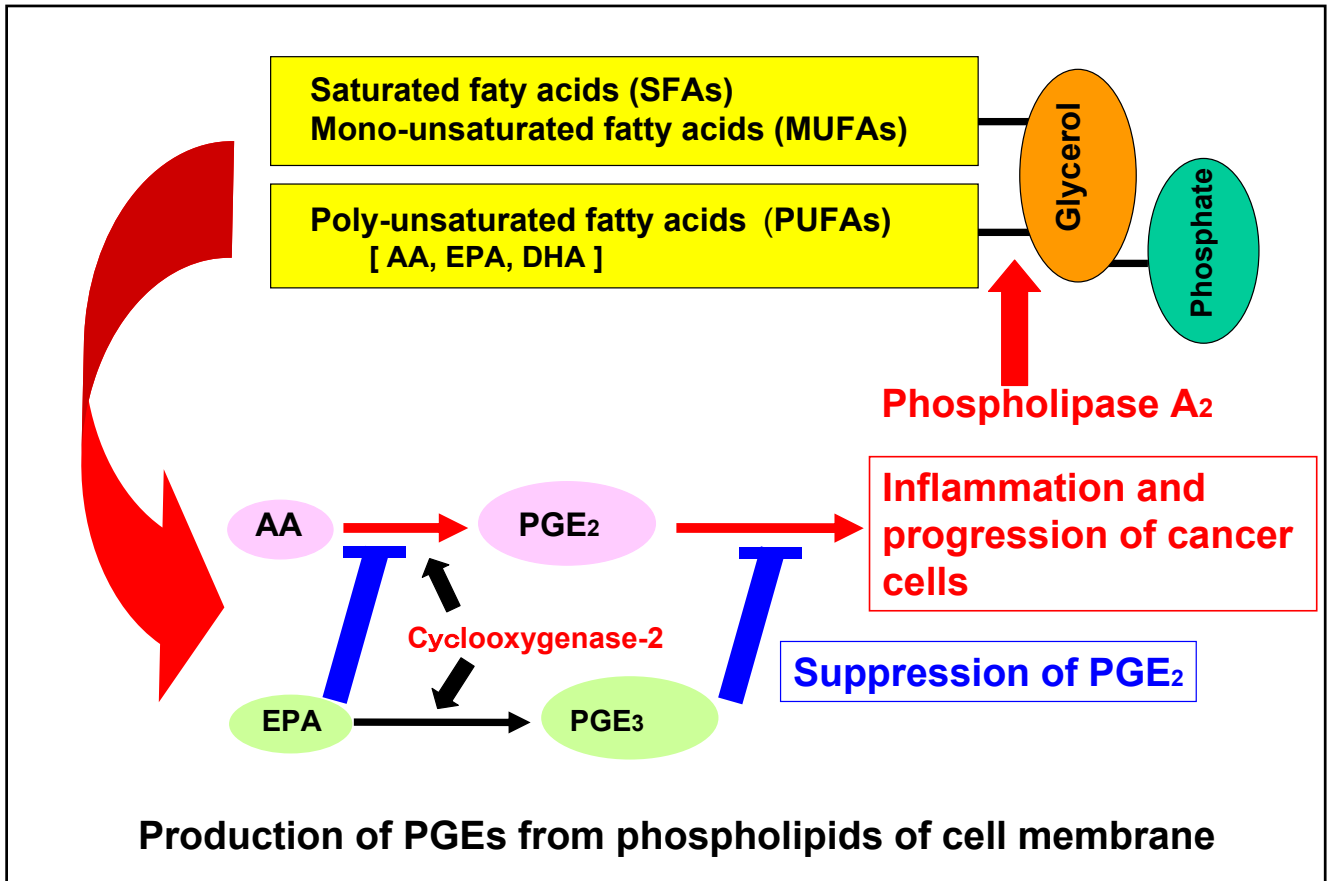


Variation of cancer risk in three countries



Breast cancer formation and hormonal function





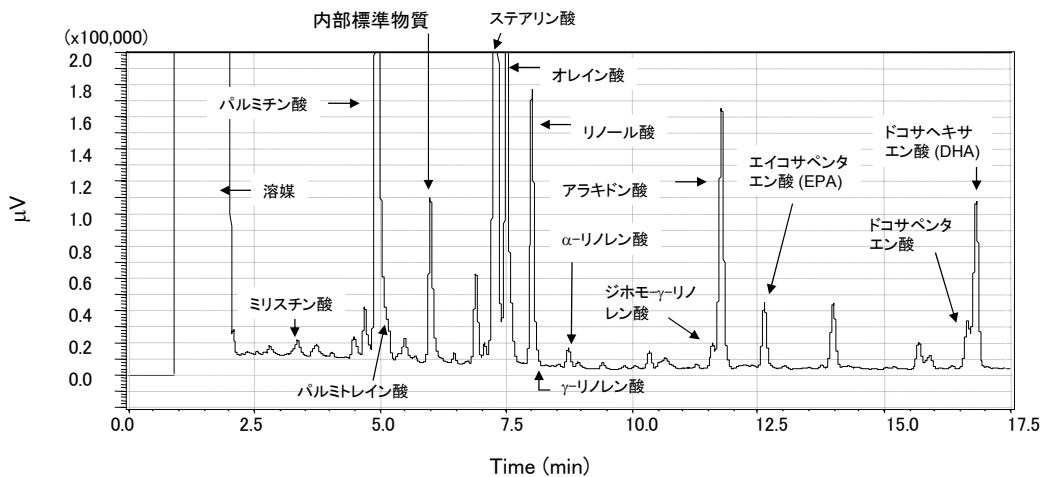
Fatty acid level by subtype on red blood cell (RBC) membrane

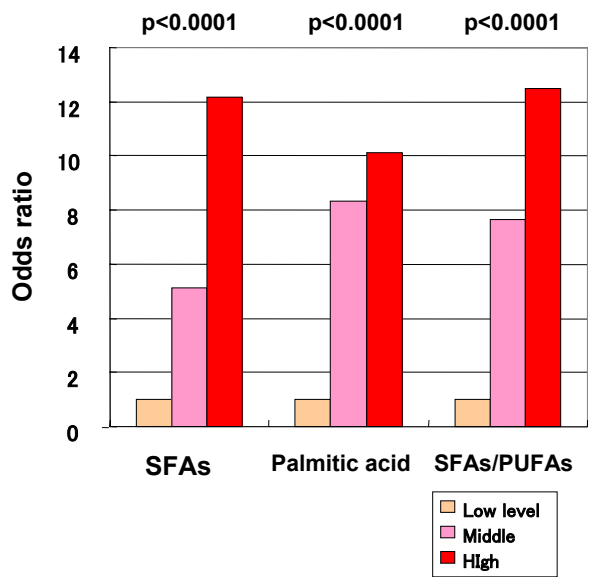
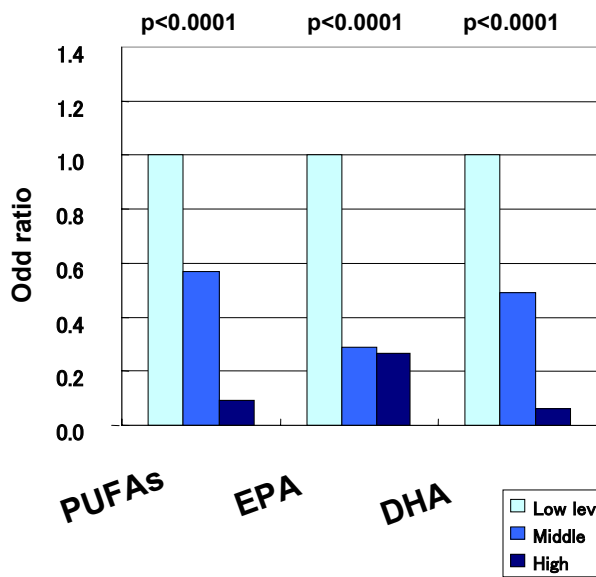
RBC

- 1) Correlating with plasma level
- 2) Reflecting dietary habits for 3~4 months

Analysis of gas-chromatography

EDTA 2Na
7ml tube

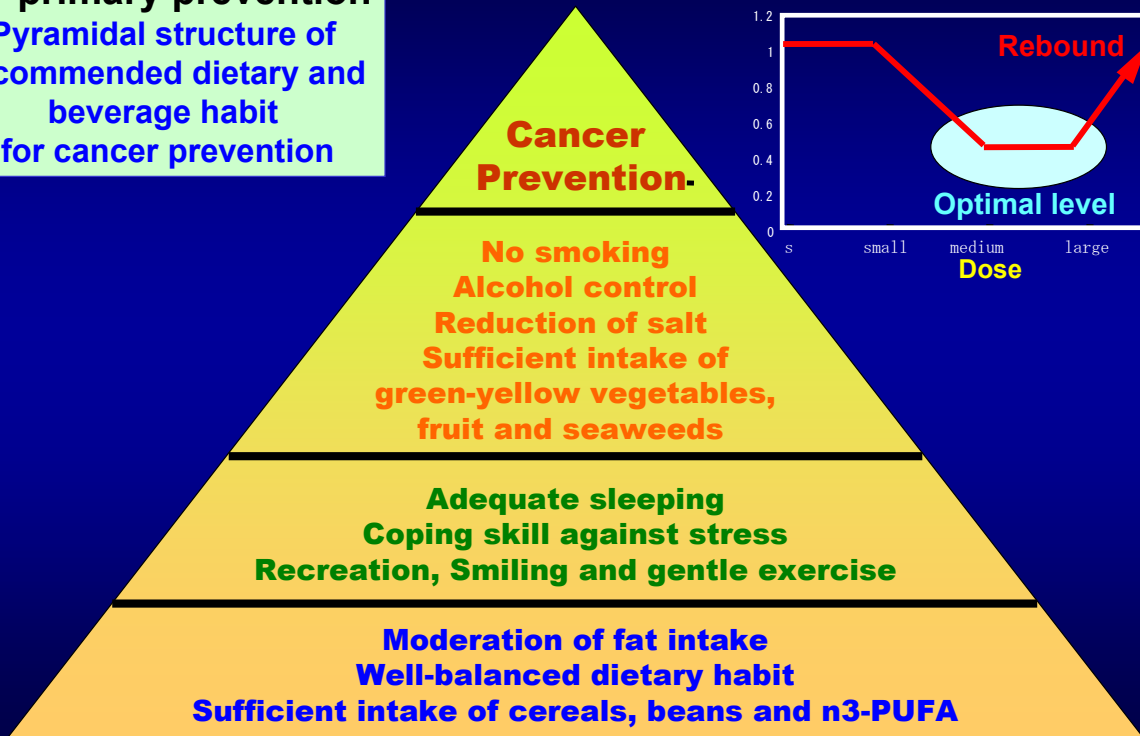




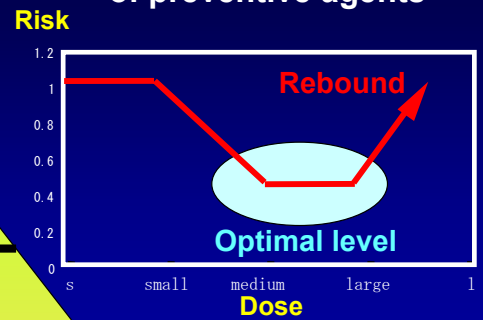
**Level of red blood cell membrane fatty acids
 for breast cancer risk
 (103 cases and 309 controls)**

(From Kuriki K et al, 2006)

**General idea
for primary prevention**
Pyramidal structure of
recommended dietary and
beverage habit
for cancer prevention



**Risk reduction by dose
of preventive agents**



Five Rule Points for Cancer Prevention

Stress the strongest weapons for cancer prevention-
no-smoking and moderation in alcohol consumption

Focus on green, yellow and red signals for health-
colored vegetables, sea weeds and fruit

Reduce all risk for cancer, including chronic diseases-
take at least 30 minutes gentle exercise twice a week

Develop a well-balanced health sense- ensure adequate
intake of nutrients with variation in foods

Contribute to Asian-Pacific healthy life in the 21st century-
plan a menu of low salt and moderate fat



Three Dimensional Strategic Directions of UICC for Practical Prevention Program (PPP) against Cancer

UICC regional strategy

Asian Pacific
Northeast
& Central
Southeast
South
West
Australasia
Africa
Latin America
East Europe
West Europe
North America

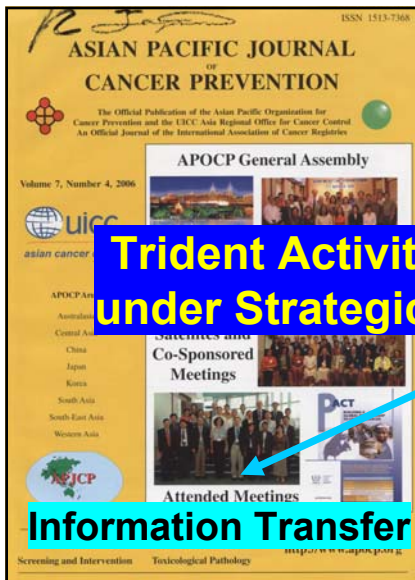
UICC global strategy

Regional cancer registry
Epidemiologic evidences
Gene-environment interaction
Practical prevention program
Massive cancer screening
Improvement of diagnosis
Development of treatment
Quality control of life

Esophagus, Stomach, Colon, Rectum, Liver, Bile duct, Pancreas, Thyroid, Breast, Uterus, Ovary, Prostate, Bladder, Kidney, Lung, CNS, Skin, Hematopoietic tissue and etc.

Starting point of PPP

Site-specific strategy



Trident Activities and Responsibilities of UICC-ARO under Strategic Direction of Asian Cancer Prevention

Information Transfer

Journals & Website (APJCP/APJCC)
Handbooks & Leaflets
Training Courses & Workshops
Regional Conferences

Research Coordination

Hospital & Regional Cancer Registries
Epidemiologic Researches
Hospital-based Case-Control Studies
Cohort-based Comparison

Intervention Efforts

PPP Centers
Rural vs Urban Areas
Clinical trials
Screening
Chemoprevention
Treatment